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Name of the work : Developments works to be under taken in Ward No.08 of BBMP around Solid Waste Disposal Processing units Bellahalli, Bagalaru and Kattigenahalli Byatarayanapura Constituency

Contractor/Agency : M/s A.G Narayanaswamy

Name of the Client : Executive Engineer,
Yelahanka Division
BBMP, Bangalore-92

Estimated Cost : Rs 1230.00 Lakhs

Status of Bill : 1st and part bill

In the Presence of : (a) Mr. Sandesh K G
Assistant Engineer, BBMP, Bangalore.
: (b) Mr. Chandrashekar R V
Assistant Executive Engineer, BBMP, Bangalore
: (c) Mr.Tejashwa gowda M.C Site Engineer
M/s Tejus Consultants

SL No	Description of Item	Comments/ observation
1	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No-27,I No-5.33,KPWD SR 2018-19)	Work done up to the billed quantity and quality is satisfactory
2	KSRRB 300-1, Earthwork excavation by manual means for roads, drains & similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specifications(I No-19.1, P No-144)	Work done up to the billed quantity and quality is satisfactory
3	Providing granite slabs of selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc., complete. (P.No-27,I No-5.31.1, KPWD SR 2018-19), 7.5cms thick	Work done up to the billed quantity and quality is satisfactory
4	KSRB 4-1.2 : Providing and laying in position plain cement concrete of Mix 1:3:6 with OPC @ 220kgs. with 40mm and down size graded granite metal coarse aggregates @0.892cum and fine aggregates @ 0.465cum machine mixed, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM curing complete as per specifications. (P.No-13,I No-4.2,KPWD SR 2018-19)	Work done up to the billed quantity and quality is satisfactory

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5	Providing and laying plain/reinforced cement concrete for side drains using M20 nominal mix concrete with OPC at 300 kgs. with 20mm and down size granite metal coarse aggregates at 0.69 cum and fine aggregates at 0.43 cum machine mixed, well compacted for walls and bottom including centering, shuttering, cost of materials, HOM of machinery, curing etc., complete excluding cost of steel as per MORTH specification No. 1500, 1700, 2200, including cost of materials, labour, HOM complete as per specificationsdo-19) Wall & bottom thickness 15cm (1 No-37.59.2,P No-271,KPWD SR 2018-	Work done up to the billed quantity and quality is satisfactory
6	KSRRB M2200-6. Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per disign (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification.(1 No-28.8.2,P No-229)	Work done up to the billed quantity and quality is satisfactory
7	Providing and Fixing pre cast covering Slab 250mm thick made out of CC 1:2:4 and jelly 20mm Down size with steel reinforcement including form work,curing,including cost of alll materials, labour,hire charges of machinery, loading, unloading, lead and lift,transportation etc ,complete.As per Engineer incharge. (Data Rate)	Work done up to the billed quantity and quality is satisfactory
8	Providing and Fixing pre cast covering Slab 100mm thick made out of CC 1:2:4 and jelly 20mm Down size with steel reinforcement including form work,curing,including cost of alll materials, labour,hire charges of machinery, loading, unloading, lead and lift,transportation etc ,complete.As per Engineer incharge. (Data Rate)	Work done up to the billed quantity and quality is satisfactory
9	KSRRB M300-14. Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1.00 km and complete as per specifications MORTH Specificatio MORTH Specification No.301Loading and unloading with 10km lead= (1 No-19.14,P No-143,KPWD SR 2018-19)	Work done up to the billed quantity and quality is satisfactory
10	KSRRB M400-17. Providing, laying, spreading and compacting cushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications(P.No-155,1 No-20.18)	Work done up to the billed quantity and quality is satisfactory
11	KSRRB M500-6. Providing and applying primer coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per specifications Clause 502 of MORTH V revision(P.No-158,1 No-21.6), issue rate dated 03-01-2020	Work done up to the billed quantity and quality is satisfactory

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12	KSRRB 500-2. Providing and applying tack coat using 80/100 grade bitumen(VG40) on the prepared black topped surfaces at 2.5 kg per 10 sqm. heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications (P.No-158,I No-21.2 TJ, issue rate dated 03-01-2020	Work done up to the billed quantity and quality is satisfactory
13	KSRRB 500-2. Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM complete as per specifications. (P.No-158,I No-21.2.K P& D SR 2018-19)	Work done up to the billed quantity and quality is satisfactory
14	KSRRB MS08-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications Clause 505 of MORTH V revisionusing 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No-168,I No-21.17.6), issue rate dated 03-01-2020	Work done up to the billed quantity and quality is satisfactory
15	Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015, using 40-60 TPH capacity HMP with mechanical paver grading II (30-45mm) with 5.4 % of modified bituminus binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)(P.No-171,I No-21.78.12), issue rate dated 03-01-2020	Work done up to the billed quantity and quality is satisfactory

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16	KSRRB M800-13,Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Bituminous Surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803(P.No-182,I No-24.15)	Work done up to the billed quantity and quality is satisfactory
17	KSRRB M200-24. Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials upto a lead of 1000 metrers, stacking serviceable and unserviceable materials seperately complete as per specifications. MORTH Specification No. 202.(I No-18.47,P No-140)	Work done up to the billed quantity and quality is satisfactory
18	KSRRB M600-1.Providing and Constructing dry lean cement concrete mix CC 1:5:10 base with OPC 25mm and down size graded granite metal coarse aggregate at 0.86cum and fine aggregates @0.58cum over a prepared sub-base, coarse and fine aggregate conforming to IS: 383-2016,aggregate cement ratio not to exceed 15:1, Aggregate gradation after blending to be as per Table 600-1,optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver, compacting with 8-10 tonnes vibratory roller, finishing and curing complete as per specifications. Clause 601of MORTH V Revision and IS 456 Table-5, with OPC at 150 kg/cum and coarse aggregate 0.86cum, fine aggregate 0.58cum using Concrete Batch mix Plant at 75 cum/hr capacity with Slip form paver with electronic sensor. (P.No-174,I No-22.1.1)	Work done up to the billed quantity and quality is satisfactory
19	Constructing un-reinforced, plain cement concrete for pavements using Grade concrete M30 with OPC at 360 kg/cum and coarse aggregate 0.69cum, fine aggregate 0.46cum. over a prepared base with OPC coarse aggregate at 0.69 cum, fine aggregates at 0.46 cum,Coarse and fine aggregate conforming to IS:383-2016, with Superplastizer at 3 lts conforming to IS 9103-2008. mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). & Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished with floaters in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting charges, joint filler, separation membrane of impermiable plastic sheet of 125 micron, sealant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades, textured with texturing machine, and curing including cost of all materials, labour,hire charges of machineries,all lead & lift charges etc., complete as per specifications. (P.No-176,I No-22.6.1)	Work done up to the billed quantity and quality is satisfactory

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		TEJUS billed quantity and quality is satisfactory
E-2	KSRB 4.1.6 , Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs. with 20mm and down size graded granite metal coarse aggregates @ 0.89 cum and fine aggregate @ 0.47Mcum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, 1HOM of machinery, curing complete as per specifications. Specification No. KPS 4.1, 4.2 (Page 13 Item 4.8)	Work done up to the billed quantity and quality is satisfactory
E-3	Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 167 mm respectively, 450mm high and 450mm in length finished with CM 1:3 plastering and finishing, cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation etc complete (Page 27 Item 5.30)	Work done up to the billed quantity and quality is satisfactory
E-4	KSRDB 300.4 compaction KSRDB 300.5& Compaction of original ground with minimum of 6 passes of 8 to 10 tonnes power roller including filling in depression occuring during rolling including cost of all labour, 1H/HP of machinery complete as per specifications. MORTH Chapter 3	Work done up to the billed quantity and quality is satisfactory
E-5	KSRDB M300- Construction of Embankment with Material Gravel Murrum, KSRDB M300-53 Construction of embankment with approved material Gravel Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement Table 300- 2 complete as per specifications,(Including cost of gravel murrum, watering charges & compaction by vibratory roller to 95% of proctors density) MORTH Specification No. 305 (Page 147 Item 19.03)	Work done up to the billed quantity and quality is satisfactory
E-6	Construction of granular sub-base Grading V as Sub-base and drainage layer by providing coarse graded crushed stone aggregate of granite/trap/basalt material, mixing by mix in place method by rotavator at OMC, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications. Clause 401 of MORTH V Revision (Page 175 Item 401.6)	Work done up to the billed quantity and quality is satisfactory

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